UNITED STATES PATENT AND TRADEMARK OFFICE

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10/577,670	12/29/2006	Hui Chen	1454.1716	8871

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EXAMINER
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

PTOL-90A (Rev. 04/07)

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE <u>3</u> MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
  Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on <u>29 November 2011</u>.

2a)☐ This action is **FINAL**.   2b)☒ This action is non-final.

3)☐ An election was made by the applicant in response to a restriction requirement set forth during the interview on _____; the restriction requirement and election have been incorporated into this action.

4)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

5)☒ Claim(s) <u>12-22</u> is/are pending in the application.

    5a) Of the above claim(s) _____ is/are withdrawn from consideration.

6)☐ Claim(s) _____ is/are allowed.

7)☒ Claim(s) <u>12-22</u> is/are rejected.

8)☐ Claim(s) _____ is/are objected to.

9)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

10)☐ The specification is objected to by the Examiner.

11)☒ The drawing(s) filed on <u>05/01/2006</u> is/are: a)☐ accepted or b)☒ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

12)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

13)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a)☒ All   b)☐ Some *   c)☐ None of:

        1.☒ Certified copies of the priority documents have been received.

        2.☐ Certified copies of the priority documents have been received in Application No. _____.

        3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1)☒ Notice of References Cited (PTO-892)
2)☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3)☐ Information Disclosure Statement(s) (PTO/SB/08)
    Paper No(s)/Mail Date _____.

4)☐ Interview Summary (PTO-413)
    Paper No(s)/Mail Date. _____.
5)☐ Notice of Informal Patent Application
6)☐ Other: _____.

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1.   A request for continued examination under 37 CFR 1.114, including the fee set

forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this

application is eligible for continued examination under 37 CFR 1.114, and the fee set

forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action

has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on

11/29/2011 has been entered.

2.   The indicated allowability of claims 12-19 in previous action are withdrawn in

view of the newly discovered 112 rejection.

Claim Rejections - 35 USC § 112

3.   Claims 12 and 20 are rejected under 35 U.S.C. 112, second paragraph, as being

indefinite for failing to particularly point out and distinctly claim the subject matter which

applicant regards as the invention. Independent claim 12, in the first paragraph, recites

providing path information about a path formed…. And the last paragraph recites

initiating at the terminal a method of determining a path between the terminal radio

station and radio access point….Examiner is not clear why after path is formed between

terminal station and the radio access point, the terminal station initiating a method of

determining a path….Applicant may want to rearrange steps in claim 1 to include

learning at the terminal radio station....initiating at the terminal radio station… and

providing path information…..Secondly, examiner has not found the novelty in claim 1,

it appears to be similar to a mesh network, where nodes initiate and form paths   when

paths fail or become out of range.

Objection

4.   Claims 12 and 20 would be allowable if rewritten or amended to overcome the

rejection(s) under 35 U.S.C. 112, 2nd paragraph, set forth in this Office action.

Claim Rejections - 35 USC § 102

5.   Claims 22 is rejected under 35 U.S.C. 102(a) as being anticipated by Cromer et

al. (US20030156558) (hereinafter Cromer).

      Per claim 22, Cromer discloses a non-transitory computer readable medium

storing instructions that when executed control at least one processor in a first radio

station to perform a method comprising (see paragraph 0070 for computer readable

medium storing instructions): storing a path between said first radio station and the

radio access point (paragraph 0064), where the path includes at least one of the second

radio stations located within a radio coverage area of the radio access point and

enabling data to be transferred from the first radio station to the radio access point and

from the radio access point to the first radio station via the path(paragraphs 0058 and

0064 i.e. **since the other MU 42 receiving the remote access request frames from**

MU 30 in not associated with AP, it rebroadcast the remote access request

frames, to which it has added its own MAC address, this rebroadcast is received

by two MU44 and 46 each is attached to an AP48. Then each of MU 44 and 46

adds mac address to the request frames and forwards them to the AP48,

therefore data is stored between MU22 and a access point via MU 44 and MU46

and transferred to the AP, see abstract where forming a path that is transmitted in

both directions from MU to AP and from AP to MU); sending test data for the radio

access point to determine whether a failure of the path exists (paragraphs 0076 and

0077); receiving and processing failure information about presence of a failure of the

stored path (paragraph 0064,0077, **i.e. mobile unit has processor which processes**

information as well as RAM and ROM functions), said storing of the path being prior

to the processing failure information (paragraph 0077, **i.e. paths are stored within**

data structure if no paths are available, start to build new path structures);

initiating a method to determine a new path between said first radio station and the

radio access point following reception of the failure information (paragraph 0077, Fig 5,

i.e. method of switching to previously stored path, when no path stored, system

starts to search for new path by building data structures until AP is in range,

therefore options are given to determine or initiate a method to determine path if

failure occurs.

Claim Rejections - 35 USC § 103

6.   The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all

obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set
> forth in section 102 of this title, if the differences between the subject matter sought to be patented and
> the prior art are such that the subject matter as a whole would have been obvious at the time the
> invention was made to a person having ordinary skill in the art to which said subject matter pertains.
> Patentability shall not be negatived by the manner in which the invention was made.

7.   Claims 12, 13, 20 and 21 are rejected under 35 U.S.C. 103(a) as being

unpatentable over Cromer et al. (US20030156558) (hereinafter Cromer) and Larsen

(US20010036810)

Per claim 12, Cromer discloses a method for operating a radio communication

system with a radio access point and a plurality of radio stations including a terminal

radio station located outside of direct radio transmission range of the radio access point

(paragraph 0021), said method comprising: said terminal radio station located outside of

direct radio transmission range of the radio access point (0021) but fail to explicitly

disclose providing, path information about a path formed of at least one further radio

station of the plurality of radio stations usable for a message transfer between the radio

access point and the terminal radio station, to the radio access point responsive to a

requirement from the radio access point prior to the message transfer; learning, at the

terminal radio station, about the requirement for the path information that was initiated

at the radio access point; and initiating at the terminal radio station a method for

determining a path between the terminal radio station and the radio access point to fulfill

the requirement initiated by the radio access point.

However, Larsen discloses providing, path information about a path formed of at

least one further radio station of the plurality of radio stations usable for a message

transfer between the radio access point and the terminal radio station, to the radio

access point responsive to a requirement from the radio access point prior to the

message transfer (paragraph 0171-0179, Fig 4 i.e. **call set up probe before data**

transfer); learning, at the terminal radio station (i.e. MSa), about the requirement for the

path information that was initiated at the radio access point (paragraph 0183-0185, **i.e. after consulting it's gradient table**) said terminal radio station located outside of direct radio transmission range of the radio access point (**Cromer reference** teaches terminal radio outside direct transmission range (paragraph 0021); and initiating at the terminal radio station a method for determining a path between the terminal radio station(i.e. MSa) and the radio access point to fulfill the requirement initiated by the radio access point (paragraph 0183-0185 and 0188-0190, **i.e. initiating a path from MSa to MSb**)

Therefore, one skilled in the art would have found it obvious from the combined teachings of Cromer which provides packet transfer between mobile unit outside AP range and Larsen provides relaying data between mobile stations and base stations by utilizing probe data to gather information of best routes for accessibility as a whole to produce the invention as claimed with a reasonable expectation of determining best route to the base station, where a mobile station may be out of range where intermediate devices may relay data and by reviewing an gradient table to determine best routes to the base station.

Per claim 13, the combination discloses the method as claimed in claim 12,Cromer discloses wherein the radio communication system includes a base station located inside the direct radio transmission range of the radio access point and the terminal radio station is located within a radio coverage area of the base station (paragraph 0021, 0057 and 0058, Fig 3), Larsen discloses wherein said method further comprises notifying the base station (i.e. RNC) by the radio access point (i.e. base station) about the requirement for the path information (paragraph 0166), and wherein

said learning by the terminal radio station about the requirement for the path information

is a result of a notification by the base station (paragraph 0166, **i.e. ID2 and ID1 set**

aside relaying resources, which is reserved for ID3, which is learned by MSa).

Therefore, one skilled in the art would have found it obvious from the combined

teachings of Cromer and Larsen as a whole to produce the invention as claimed with a

reasonable expectation of learning by MSa about best path to the base station.

Per claim 20, refer to same rationale as explained in claim 12 (multiple nodes

can broadcast information as well as listen for notifications when terminal is turned on).

Per claim 21, Cromer discloses a first radio station for a radio the radio

communication system formed of a radio access point and at least one second radio

station in addition to the first radio station, the first radio station comprising: means for

storing a path between said first radio station and the radio access point (paragraph

0064), where the path is formed of at least one of the second radio stations and

enabling data to be transferred from said first radio station to the radio access point and

from the radio access point to said first radio station via the path (paragraphs 0058 and

0064),the at least one further radio station located within a coverage area of the radio

access point; means for sending test data for the radio access point to determine

whether a failure of the path exists (paragraphs 0076 and 0077); means for receiving

and processing failure information about presence of a failure of the stored path

(paragraph 0064,0077, **i.e. mobile unit has processor which processes information**

as well as RAM and ROM functions), said storing of the path being prior to the

processing failure information (paragraph 0077, **i.e. paths are stored within data**

structure if no paths are available, start to build new path structures, examiner

does not see by adding this amendment where the claim is distinguished over

the prior art); and means for initiating a method to determine a new path between said

first radio station and the radio access point following reception of the failure information

(paragraph 0077, Fig 5, **i.e. method of switching to previously stored path, when no**

path stored, system starts to search for new path by building data structures until

AP is in range, therefore options are given to determine or initiate a method to

determine path if failure occurs.

Larson discloses provides means for providing, path information about a path

formed of at least one further radio station of a plurality of radio stations, the at least one

further radio station located within a radio coverage area of the radio access point (see

Cromer reference 0058 and 0064, explained in claim 22, MU44 and MU46 within

range), usable for a message transfer between the radio access point and the first radio

station, to the radio access point responsive to a requirement from the radio access

point prior to the message transfer (paragraph 0171-0179).

Therefore, one skilled in the art would have found it obvious from the combined

teachings of Cromer which provides packet transfer between mobile unit outside AP

range, where notifications are broadcast from mobile units inside of range of the AP, to

mobile unit outside the range where data can be sent to the AP from non-associated

mobile units and Larsen provides relaying data between mobile stations and base

stations by utilizing probe data to gather information of best routes for accessibility as a

whole to produce the invention as claimed with a reasonable expectation of ensuring if

problem is detected in path, determining next route stored or finding new path.

8.   Claims 14-19 are rejected under 35 U.S.C. 103(a) as being unpatentable over

Cromer and Larsen as applied to claim12 above, and further in view of Raji

(US20040219878).

        Per claim 14, The combination discloses the method as claimed in claim 12,

Cromer discloses wherein a known path between the terminal radio station and the

radio access point formed of at least one further radio station is known to the terminal

radio station and the radio access point (paragraph 0058), enabling data to be

transferred from the terminal radio station to the radio access point and from the radio

access point to the terminal radio station via the path (paragraph 0032-0039 and 0058)

wherein said method further comprises receiving, at the radio access point, failure

information about failure of the known path from a radio station of the path (paragraph

0058); initiating, at the terminal radio station, a method for determining a new path

between the terminal radio station and the radio access point (paragraph 0058) but fails

to discloses learning at the terminal radio station about the failure of the known path

after the radio access point leans about the failure.

        However, Raji discloses learning at the terminal radio station about the failure of

the known path after the radio access point learns about the failure (paragraph 0073).

Therefore, one skilled in the art would have found it obvious from the combined

teachings of Cromer, Larsen and **Raji**, which provides knowledge of dropped and

created paths via source/intermediate nodes, as a whole to produce the invention as

claimed with a reasonable expectation of achieving process of dropping and developing

new paths for continued communication.

Per claim 15, the combination discloses the method as claimed in claim 14,

wherein Cromer discloses said learning about the failure of the known path at the radio

access point results from information received in response to sending data from the

radio access point to the terminal radio station (paragraph 0077).

Per claim 16, the combination discloses the method as claimed in claim 15,

wherein Cromer discloses said method further comprises sending test data for the radio

access point from the terminal radio station to determine whether the failure exists in the

known path (paragraph 0077, **i.e. next path stored within the first data structure is

attempted to correct problem**).

Per claim 17, the combination discloses the method as claimed in claim 16,

wherein Cromer discloses said sending of the test data takes place at regular time

intervals (paragraphs 0078-0080 and 0090).

Per claim 18, the combination discloses the method as claimed in claim 16,

wherein Cromer said learning about the failure of the known path at the terminal radio

station results from said sending of the test data to determine whether the failure exists

in the known path (paragraph 0077).

Per claim 19, the combination discloses the method as claimed in claim 18,

wherein Cromer discloses said sending of the test data by the terminal radio station to

determine whether the failure exists in the known path results from at least one

notification sent as a result of a preceding determination of the known path (paragraph

0113).

Conclusion

Any inquiry concerning this communication or earlier communications from the

examiner should be directed to JOSEPH DEAN, JR whose telephone number is

(571)270-7116. The examiner can normally be reached on Monday through Friday

7:30am to 5:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's

supervisor, Dwayne Bost can be reached on 571-272-7023. The fax phone number for

the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the

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you have questions on access to the Private PAIR system, contact the Electronic

Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a

USPTO Customer Service Representative or access to the automated information

system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Dwayne Bost/
Supervisory Patent Examiner,
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